;login:

The USENIX Association Newsletter

Volume 10, Number 1   **February 1985**

CONTENTS

The closing date for submissions for the next issue of *;login:* is May 1, 1985

NOTICE

Members of the UNIX community are heartily encouraged to contribute articles and suggestions for *;login:*. Your contributions may be sent to the editors electronically at the addresses above or through the U.S. mail to the Association office at the address above. The USENIX Association reserves the right to edit submitted material.

;login: is produced on UNIX using *troff* and a variation of the −me macros. We appreciate receiving your contributions in *n/troff* input format, using any macro package. If you contribute hardcopy articles please leave left and right margins of 1" and a top margin of 1½" and a bottom margin of 1¼". Hardcopy output from a line printer or most dot-matrix printers is not reproducible.

Acknowledgments

[†]UNIX is a trademark of AT&T Bell Laboratories. [‡]VAX is a trademark of Digital Equipment Corporation.

A Bit About Eighth Edition UNIX

Harold Cross

Version Eight, Eighth Edition, V8; these names refer to the flavor of UNIX which is currently in use by the Computing Science Research Laboratory of AT&T Bell Laboratories. This article is meant to familiarize the reader with V8. It does not describe it in any great detail. For additional information see the references or send me mail (bellcore!hac).

V8 is based on 4.1BSD. Naturally 4.1 didn't spin around on 1127's disks for long before changes were being made. But it wasn't dubbed Eighth Edition until about two years ago.

From research!dmr Mon May 30 01:45 EDT 1983
:tcejbuS v8

The Eighth Edition System is the line discipline stuff, plus PJW's
4K file system, plus his remote file system. I.e. we decided
to give our state a name. Partly this was to disarm complaints
that we were running 4BSD. Also, Doug is trying to arrange a new
manual, so besides the considerable system changes there may be an
actual printed 8th edition manual.

Streams

The line discipline stuff was first described publicly by **dmr** at the Winter 1981 USENIX meeting. Further coverage is found in [1]. Briefly, it is a mechanism providing a full duplex channel through which processes (user level and kernel) communicate. It is also known as a stacked line discipline. Processing modules can be pushed into (and popped) from the channel. Thus, for instance, the *init* program opens a terminal device and pushes a "tty" line discipline into a channel between it and the terminal. Likewise, when switching handlers from the "old" to "new" disciplines using the *stty* program, it first pops the old one from the channel and then pushes in the new one.

The various disciplines are kernel objects (functions). This provides an elegant (clean in design, implementation and use) mechanism that isolates many common character processing functions from device drivers in the kernel. The generality afforded is also exploited to do such things as hardware simulation or, as **rob** has done with the 5620 terminal, to place the terminal handler in another processor.

Fast File System

pjw's 4k file system is a fast file system which coexists with standard 4.1BSD-type file systems[†]. There are two aspects which make this implementation faster than the 4.1 file system (and probably as fast as the 4.2 file system).

The block size is 4K bytes. More interesting is the fact that the "free list" is described by a bitmap. The bitmap resides in core, allowing for quickly locating free blocks and even more quickly adding blocks to the free list. A side effect of this implementation (or perhaps its impetus) is that the search for a free block (given the previous used block) can efficiently locate one on an appropriate cylinder (if there's one available). The latter aspect is probably the most significant factor in overall increased throughput.

I mentioned that the 4k file system coexists with the older type. The file system structure contains a union of the two free list implementations and the appropriate I/O routines check the file system type. Although not as gross as the 4.2 file system, this implementation also trades off conceptual

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[†]In fact the superblock structure is rearranged making it necessary to "fix" a 4.1 file system using *fsck*. But it's a simple matter to rearrange it so that this isn't necessary.

simplicity for efficiency.

Network File System

pjw's conceptual pendulum swings the other way with regard to the remote file system. Here entirely new capabilities are added in a straightforward manner. The remote file system uses a hierarchical syntax where remote machines' file systems are mounted on the local file system (the convention is /n/machine/...). It's implemented in the kernel on the local machine and at the user level on the remote. The implementation is transparent to the users' programs. Locally, there is a file system switch (a la *cdevsw*) that causes the appropriate routines to be invoked on the different types of files (local, network, processes (see later), and faces[†]). Routines that access networked file systems do so by invoking a server on the remote machine.

One of the nicest aspects of this system is its generality. A remote file system is mounted by telling the system the local mount point and giving it a stream connected to the remote file server. Thus the network file system can theoretically run over any communications path (a modem, a tty line, Ethernet, PCL, etc.). Since the server is a program utilizing nothing more system-dependent than *select* (and an understanding files), it can run under any version of UNIX. This means I can share anyone else's file systems but not vise versa.

Another new type of file is implemented in the concept of processes as files [2]. Here the directory /proc contains files that represent running processes. The standard file access routines in this case interact with the address space of the said processes. This is a nifty way to manipulate them. (By the way, there are 128 file descriptors in the Eighth Edition.)

V8 is more than the key kernel changes described above. Next installment I'll describe some of the wonderful utilities and applications available under V8. But the system is merely a reflection of its designers, contributors and maintainers, most of whom just seem to possess extraordinarily good taste. Remember the Seventh Edition?

References

.[1] "A Stream Input-Output System," Dennis Ritchie. B.L.T.J. 63:8, October 1984, pp. 1897-1910.

[2] "Processes as Files," T. J. Killian. Proceedings of the Summer 1984 USENIX Conference, Salt Lake City, Utah.

Scheduling and Content of USENIX Meetings

A Message to the USENIX Membership

At the Summer '84 Salt Lake USENIX conference, we took a survey of attendees to get input on a number of topics related to the conferences. For example, most people felt that a printed conference proceedings available on-site was very useful. For this reason, the Dallas conference organizers worked very hard to produce a proceedings, and we intend to continue the practice.

Among others, the following policy issues were covered in the survey:

1. Should USENIX hold one or two conferences per year?

2. Is it desirable to hold one USENIX conference jointly with /usr/group?

A majority of those surveyed answered "yes" to both questions. However, both questions may have been tied together in many minds: it was assumed that if two conferences were held yearly, then

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[†]When a process opens a file of this type, the appropriate representation of someone's face is retrieved. More on this next time.

one of them would be held jointly with the /usr/group UniForum show (which is held yearly each winter). In response to the survey and the general direction of the UniForum show, we developed the idea that UniForum would be a huge UNIX trade show/conference, and USENIX could have one of its technical meetings at the same place (thus minimizing travel time and expense for the many attendees who want both kinds of information). Our conference would be a bit shorter, so as to easily coexist with UniForum. The other (summer) USENIX conference would be longer, and would have its own vendor show. The vendor show would be smaller that UniForum, with a different focus.

In order to hold a joint conference, both organizations must agree to the following:

1. Registration procedures and policies.

2. Division of revenues and expenses.

3. Show/conference management procedures.

4. Promotion.

5. Allocation of hotel, conference, and exhibit space.

As the two organizations have somewhat different goals and methods, it is not surprising that there is opportunity for controversy and dispute. In past years, there have indeed been a number of disputes. These disputes have been sharpened and intensified by internal debates within each organization about their respective rolls in the community. Both organizations have been adapting to changing conditions and goals. Finally, meetings of any size (e.g. 1500 or more) must be planned and scheduled with long lead times. It is not easy to find good facilities. Hotel and convention facilities must be booked well in advance, with severe financial penalties for cancellation. (If we had decided to cancel the Dallas conference after the hotel contract had been signed, we would have been liable for on the order of $100,000 in damages.)

In line with the survey results, the USENIX Association held its Dallas conference at the same time and in the same city as UniForum. It was not possible to reach agreement with /usr/group to allow simple cross-registration in both conferences, although complementary registration to the trade show was arranged. There was also some geographic separation of sites (with shuttle bus service or a seven minute cab ride). Our conference seemed to go well. Although the USENIX conference and UniForum were separate events, our conference was designed to be non-competitive, concentrating on the more technical aspects of UNIX systems. We also shortened the conference by one day. This reduced the overlap of sessions, thus making it more convenient for our members to also attend the UniForum show.

As noted above, to have a fully-integrated joint conference, there must be good agreement on all major issues, and this agreement must be reached well in advance. We were not able to reach a suitable agreement with respect to the Winter '86 UniForum show in Anaheim. Again, we could not resolve all issues related to a full joint conference. We did explore repeating the Dallas setup — separate conference, but in the same city at the same time. However, all suitable hotel space was already booked by UniForum. A hotel would have to release /usr/group from its contract, and replace it with USENIX. /usr/group stated that the hotel space could not be released to USENIX. (It appears that the same may also hold true for 1987.) Therefore, we were faced with three alternatives:

1. Cancel the Winter '86 USENIX meeting.

2. Hold the meeting at the same time in the closest city with a suitable facility, in this case Los Angeles or San Diego (nothing closer is available). Commuting times from USENIX to UniForum would then be at least one hour, and perhaps two hours.

3. Hold the meeting at some other time and place.

We chose option 3. No option is entirely suitable. Our membership has stated a preference for two meetings a year. Option 2 seemed incredibly inconvenient for attendees of both meetings. Option 3 causes extra time and travel expense for persons desiring to attend both conferences. Many people find it hard to budget even one conference per year. A second conference can sometimes be slipped in as a trade show involving sales activity, but three conferences (one /usr/group, two USENIX) may be

just too much.

Since it is clear that not everyone will attend every conference, our solution is to provide a smaller, more specialized winter meeting, and a larger, more general summer meeting. Our current thinking is that the winter meeting will focus on specific topic areas, and may in fact consist mostly of workshops rather than general sessions.

Accordingly, we have scheduled our next winter conference for January 15−17, 1986 in Denver, Colorado, thus separating it by three weeks from the UniForum show to be held February 3−7, 1986 in Anaheim, California. Our next summer conference is scheduled for June 11−14, 1985 in Portland, Oregon.†

Our members should note that, although /usr/group and USENIX will not be meeting jointly in Anaheim, relations between the two organizations have been steadily improving. The direction of each organization has been changing, and some of the conflicts of the past no longer apply. It is possible that joint conferences will be held in the future. We would appreciate continued comments from the membership on our conference directions.

Alan Nemeth, President

The Winter 85 USENIX Conference − First Order Observations

Kip Bore

The 1985 Winter USENIX convention was held January 23-25 in Dallas, Texas. The Fairmont Hotel provided an elegant setting, in keeping with the USENIX tradition of outclassing the attendees. At first we feared we had arrived at the wrong hotel − there was no line of eager wizards waiting to check in, no loiterers in the lobby sharing the finer points of sendmail configuration files. We soon found our way onto a bus (UniForum Route #1) and headed for the AT&T bash at the Anatole, by way of the famed InfoMart (housing the vendor exhibits) and UniForum Bus Route #2. Here we found a few familiar faces, many of whom had new business cards to trade.

We hope that the summer 1984 meeting has established an enduring precedent, as copies of the *Proceedings* were again available at the conference. We'd like to review some highlights that we believe won't otherwise be found in print. The talks got off to a promising start, with an entertaining keynote address by Rob Kolstad ("Whither the Gurus"). This topic seemed especially timely as we searched the audience for seasoned veterans of USENIX meetings, and found them lacking. Lauren brought us up to date on the satellite netnews experiment, complete with slides of rural Georgia (home of WTBS) and a live demonstration. Hotel personnel were puzzled at the throngs gathered around a television set that had been adjusted to split its picture by a snowy horizontal line. (For this, they rented a satellite dish?) Nearby, net.physics scrolled slowly by on a VT100. Susan Nycum gave a lucid presentation on the legal issues that cloud the project. The audience was invited to raise non-technical questions at the open board meeting‡, effectively staving off the expected controversy.

We learned that the 4.2 BSD XNS tools developed at the University of Maryland were first tested a few days before the conference (and they do work). Ian Darwin enthralled the audience with his talk (it's hard to describe the sound of hundreds gasping ". . . oh no, not *init*"). We found it curious that a speaker had prepared a set of hand-written viewgraphs for his presentation on *troff.* In the final session of the meeting, Peter Honeyman cast a spell of confusion on the dwindling audience when he incanted the words "directed graph." We were amused by the results of Mark Horton's query: "How many of you believe that the present form of mail routing (*i.e., machine!user*) is satisfactory?" (A few hands went up.) "How many of you believe that we need something new (*i.e.,* domains)?" (A few hundred

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†Other articles in this issue have more information on future meetings.

‡Covered in the article on the Open Board Meeting elsewhere in this issue.

hands went up.) Given these results, we were troubled that most of the addresses we found in the attendee roster were of the form "*machine!user.*" In fact, a rough count showed that these outnumbered domain-style addresses seven to one. From these data we conclude that "domainists" tend to register on-site, and "bangists" prefer to catch early flights home.

One afternoon we ventured to explore the InfoMart (voluntarily), home to vendor exhibits on a daunting scale. Cleverly, we were issued an embossed plastic badge, and each vendor was issued lots of carbon-layered forms and a credit-card machine. Whoosh! With one snap of the wrist, we were assured of finding ourselves on dozens of new mailing lists. We limited our attendance to a handful of exhibits (hot new machines and a few vendors from whom we really *needed* information). On the positive side, we detected a technical presence at several of the exhibits we sampled. We approached one glowing console, and observed 23 lines of failed login attempts (*e.g.,* "guest"). We typed "root" and were promptly rewarded with '#'. Over the years, we have grown weary of "cp /bin/sh /dev/kmem," so we simply cleared the screen and typed '^D'. It was not an outstanding show for collectors of UNIX memorabilia. Although attendance was rumored below expectations, DEC's supply of UNIX licenses was exhausted early. We saw no jugglers or larger-than-life inflatable frogs, but we did notice one "Delilah" in gold lame.

The social hit of the meeting was a group outing to "Photon," where players donned helmets, battery packs, and LED-studded gear, the better to dart around in the dark zapping one another. The lobby bar was more empty than not, and we concluded that the hospitality suites (and excitement) must abound at the UniForum hotels. This theory died hard when a UNIX luminary appeared late one night, seeking a room at the Fairmont. His UniForum hotel was dead, and he was emigrating to be "where the action was." Blue ribbons adorned more than the usual number of participants, with "Listeners" outnumbering "Speakers," and in turn being surpassed by "Sleepers." We also noticed an occasional "Bored Member" and the prized "Best of Breed." In all, we spotted only one Bill Joy and nary a Rob Pike badge.

The open USENIX Board Meeting was notable for its lack of controversy. The Stargate project was discussed at great length, but we thought nothing new was said and it all came to no particular end. The separation from UniForum was viewed mostly as a good thing; exception taken by those individuals who can attend only one conference per year. The co-occurrence of USENIX and UniForum (in time and space) is not likely to happen in the future, and that presents a dilemma for some who must choose. The "how-many-meetings-should-we-have-each-year" issue was raised again. The answer is still "two," with emphasis on a broad, long, technical conference in the summer and a specialized, short, workshop-oriented winter meeting.

Before long it was time to board our return flight, where we reflected on Dallas in January and began looking forward to Portland in June.

The Winter 85 USENIX Conference — E.U.U.G's Report

Dallas, Texas, 23rd — 25th January

— An Informal Report —

Dominic Dunlop

Sphinx Limited

Dallas, Texas. Where everything is bigger, including UNIX conferences. If you think 2,000 delegates for USENIX is a lot, what about the 20,000 at UniForum, held in the same city at the same time? The division couldn't have worked out better: UniForum attracted all the marketing presentations and put on the biggest trade-show yet, but left USENIX with a solid diet of technical material for

UNIX aficionados without three-piece suits.

Dress code for gurus (wear jeans with no more than three holes, but don't bother to buy a tie) was featured in the keynote presentation, "Whither the Gurus?" by Rob Kolstad of Convex Computer Corp. Explaining that gurus are like cabbage-patch dolls — inordinately expensive, hard to find, and all different (though not, on the whole, cuddly) — Rob described how to build a guru trap. You bait it with lots of money, lots of fast hardware (Convex makes super-computers, so no problem there), and a stock-option. And, to keep a guru once you've got one, make sure that your vending machines are restocked with junk food twice a day. Well, this is America.

But how does a mere programmer get to be such a sought-after commodity, and not a mere initiate, wizard or lama (lama?)? Training, that's how. You need to learn left-handed touch-typing (so you can hold your coffee cup in your right hand). You need to learn about sixth-generation computers (AI will *really* work this time around). And you must be aware of the software Peter Principle: any program will ultimately rise to its level of incompetence. Rob's software University offers all these skills and more, and is open to any student with money...

The first paper, by Lauren Weinstein of Vortex Technology, hardly brought us down to earth: it was a discussion of transmitting netnews by satellite. At a previous meeting, Lauren had rashly volunteered to get a demonstration system going, sneaking netnews into unused lines on satellite TV signals (Hmm, how about it, Sky Channel?). Finding a TV company which understood the concept, but wasn't already selling all the available time to Dow Jones for millions of dollars, proved difficult, but WTBS in Atlanta came to the rescue. The initial hook-up followed netmail tradition by beaming a signal 47,000 miles to get it 8 miles from a network gateway to Lauren's experimental receiver. The demonstration at the conference showed a somewhat longer hop, and those of us with badly adjusted TVs in our hotel rooms could actually watch netnews at the top of the screen!

Ninety minutes into the conference and no word yet from a lawyer. Too good to last? Yes. But, surprise, surprise, Susan Nycum hadn't come to tell us about UNIX licensing. She gave an interesting analysis of five good ways of getting sued over the content of your news item. Using a broadcast medium like a satellite might mean the carrier could get sued too. What makes you think the US was founded by lawyers? By the way, you won't find the paper in the proceedings: Susan said it would be impossible to write any sort of legal statement on just a few sheets. Besides, who would put on the ribbons and seals?

Then coffee and time to skip off. A sporadic but free exhibition of American buses of the past fifteen years operated between the conference hotel and Crystal Palace. Sorry, Infomart, a remarkable building modelled after that of the great exhibition in London 120 years ago. UniForum was the first show to be staged there and, in tribute to the hardware and software on show, construction was almost finished. I dallied several hours among the biggest collection of UNIX hardware and software ever assembled under one roof, and chuckled to myself about the number of thrusting market analysis handouts which AT&T's "kiss and make-up" session with Microsoft, announced two days before, had invalidated.

By the time I'd got back to USENIX, I'd missed all the kernel implementation papers, arriving in the middle of a religious service dedicated to "Modula-2: An Alternative to C for Systems Programming" by Morris Djavaheri and Stan Osborne of San Francisco State University. In America, the state and religion are constitutionally separated so it was only fair that we should next hear about "A UNIX-based Ada Run-time System" from M. D. Scheer and S. Rajeev of AT&T Bell Labs (whose trademark Ada is not). And, answering a similar need by adding new primitives to the only language we can currently rely on, Gehani and Roome (also of Bell Labs) gave an overview of Concurrent C. An unkind suggestion that this exemplified the software Peter Principle at work was adequately refuted in the ensuing panel discussion.

Another break, this time for soft drinks devoid of any unfashionable substance which might make them palatable. The day's final session dealt with performance measurement. Bill Meyer's graphic alternative to *ps* and its relatives looks interesting, and may yet pop-up in net.sources. John Saxter discussed "Interpreting UNIX Benchmarks" in a rather lightweight manner. More interesting was a Birds

of a Feather session by Gene Dronek, author of the AIM Benchmarks, a commercial suite. Gene is working on defining a "standard VAX" (750 and 780, System V and 4.2BSD) so that we can know what all these comparisons so beloved by advertisers actually mean (he's an optimist). If you can help, contact Gene. He also has a program which will degrade your disk performance by 3% for each minute it runs...

During what was left of the evening, we had time to discover two more things that are bigger in Texas: the lack of downtown activity after dark, and the distance to an open restaurant or bar. The USENIX city guide showed where succor could be found.

Friday got straight down to business at 8:30am (the room was $80 a night, couldn't I lie in?) with a well-presented paper from the University of Maryland. A gift of 30 Xerox workstations (why don't I get presents like that?) prompted them to discover that Berkeley's much-vaunted generalised networking kernel isn't really. Making it support Xerox Network Systems protocols as well as TCP/IP across an Ethernet turned out to be quite a job. The code is available free if you're a University Grants Program member. Forget it. You're not.

XNS was a mere hack beside "The Lincs Communications Architecture" described by Joseph Requa of Lawrence Livermore Labs. If you feel like re-writing your kernel from scratch, read his paper. At a much more populist level, Judi Uttal of Locus Computer Corp told us about a Transparent Integration of UNIX and MS-DOS. Neat. Your PC just treats the UNIX system (or one of a choice of networked UNIX systems) as another drive. Finally, somebody from Sun (the paper has nine names on it, and I lost track) gave us an Overview of the Sun Network File System. Not as ambitious as (say) the Newcastle Connection, NFS allows transparent operations on remote disk files (but not device files). There is no remote execution. A display of Ethernet-connected Sun, Pyramid and Gould machines working with NFS at the UniForum show testified to the system's practicality.

After coffee time, comedy time. Ian Darwin and Geoff Collier's paper, titled, among other things, "Real Programs Dump Core", started off by stating that bugs always happen to the other guy. Which would be fine if there were a kernel call to tell you whether you're running in *other guy* mode. Then followed a series of horror stories about some real programs, some subtly changed to protect the innocent (well, AT&T's lawyers would plead that way anyway). More amiable flack for Ma Bell (deceased) came from Motorola's Alan Filipski, describing some fun things they'd found when porting System V to the 68000.

I missed out on the Software Tools and Applications papers, although "Development of a Compiler for the Bourne Shell" by Vincent Kasten and Paul Ruel makes good reading for anybody considering compiling any language designed for interpretation, without a specification, and with lots of weird special cases (example:

```
case i in
        esac|a)
```

is illegal, but

```
case i in
        a|esac)
```

is fine).

A discussion of mail closed the conference, perhaps to remind everybody to keep in touch. Mark Horton et al of AT&T Bell Labs et cetera are struggling valiantly to approximate reality as closely as possible with network maps and (600 Kbyte) databases. Peter Honeyman of Princeton discussed how to parse *seismo!cak%purdue@csnet-relay*, and similar valid but problematic addresses on the various US networks (you knew USENET is not mathematically a network didn't you?). The next speaker, Mike O'Brien of BBN, pointed out that his experience was that some mail bears addresses which owe much more to invention than to logic, and described an inverted index system for generating addresses from names. That USENET is an anarchic tangle was shown by Mark Horton's straw poll: almost all those present voted that a system of domains should be put in place, so that in the absence of an efficient address which is known to work, something like *user!site@europe* would be guaranteed to work. Public

domain software to supervise this under 4.2BSD and System V should hit the streets soon. Don't worry — your favourite mile-long '!' addresses will still be supported.

And so it ended, leaving the hotel empty but for the few of us who had elected to leave all of Saturday to get through the labyrinth of the Dallas-Fort Worth airport, apparently a projection into three-space of a perverse higher-dimensional object.

Thanks are due to Charisse Castagnoli of Teknetron Infoswitch for pulling together the programme in record time, and to Rob Kolstad for burning midnight-oil — and the ears of several of the speakers — in order to get the proceedings published before the conference[†].

A Report on the Dallas USENIX Open Board Meeting[*]

Lyle McElhaney

The open board meeting held Thursday evening at the USENIX conference was somewhat interesting. The first hour was entirely Stargate. The board's position seemed to be that they sponsored (right word?) the Stargate experiment, and now it's up to the net to do as it will. They feel that the net is not their bailiwick, exactly, and that their constituency is not congruent with the net community (it's overlapping, actually). They will happily support peripheral projects (e.g., the mapping project and Stargate). Their further role with respect to the net is not definite (indeed, I heard no new ideas about future projects).

Concerning the legal problems issue of Stargate, they are cognizant of the no-liability-broadcast vs. liable-if-moderated legal stances (indeed, they paid for the legal research by Gail Shulman cited in the December 1984 issue of *;login:* and reiterated by Ms. Nycum at the conference). The consensus seems to favor the moderated news, on the grounds that the quality would be better. As for the possibility of suits based on the publishers role (providing USENIX was involved) their stance is that they already publish a newsletter under those constraints, and live with it, and besides, that's what insurance is for.

USENIX tapes — should they continue? A lot of the stuff that used to go into the tapes is now distributed by net.sources. The amount of submissions is declining.

Future conferences — Portland in the summer, Denver in January, Atlanta next summer. The Denver conference will probably be three one-day special topic workshops with complimentary tutorials on the other two days for each topic. Thus, one could either get in-depth on a single topic, or one-day state-of-the-art on three topics. Sounds rather nice. Six or eight possible topics were mentioned. Send your votes to your favorite board member.

UniForum is to be in Anaheim one or two weeks later after the Denver conference. Apparently they (/usr/group) have booked all the hotels nearby, requiring USENIX, in order to pull another Dallas, to support a ~50 miles (or more) commute. Unacceptable. So the parting of the ways has finally occurred. Emphasis was on the fact that there is no animosity 'tween the groups, just that they have both grown too big to co-use a conference. Believe it or not...

(All the above is my impression of what was said; any correlation with reality is problematical, and subject to change without notice.)

[†]For copies, see the article on Proceedings in this issue.

[*]Taken with permission from Usenet. -Ed.

Thanks

For helping at the USENIX booth during the Dallas Conference, I would like to publically thank Mark Horton, Lewis Law, Alan Nemeth and Karen Summers-Horton.

Betty Madden, USENIX Office Manager

Future Meetings of the USENIX Association

June 11−14, 1985: Portland, Oregon

The Summer 85 Conference and Vendor Exhibition will be held in Portland, Oregon, on June 11−14, 1985. The theme will center around the 10th Anniversary of the first UNIX user group meetings.

The meeting headquarters and vendor exhibits will be at the Portland Marriott Hotel, 1401 S. W. Front Avenue. The conference host is Tektronix, Inc. The schedule of events is:

Tutorials Tuesday, June 11
Technical Sessions Wednesday−Friday, June 12−14
Vendor Exhibition Tuesday−Thursday, June 11−13

A pre-registration packet containing detailed conference information and hotel reservation forms will be mailed in early April.

If you wish to receive details on exhibiting, please contact:

Peter Johnson
Industrial Presentations West, Inc.
12371 Cornell Avenue
Aurora, CO 80014

(303) 696-6100

If you did not receive this announcement directly and wish to be put on the mailing list for the pre-registration packet, please contact:

USENIX Conference Office
P.O. Box 385
Sunset Beach, CA 90742

(213) 592-3243 / 592-1381

January 15−17, 1986: Denver, Colorado

The emphasis will be on a series of intensive workshop seminars; there will also be tutorials.

June 10−13, 1986: Atlanta, Georgia

There will be a conference, tutorials and vendor exhibits.

June 9−12, 1987: Phoenix, Arizona

There will be a conference, tutorials and vendor exhibits.

Negotiations are currently underway for meetings in Boston, San Francisco, Philadelphia and San Diego. Dates for these sites are pending.

Call for Papers for the Summer 85 Conference

Abstracts due March 18, 1985

Conference Host   Tektronix, Inc.

Conference Chair   Steve Glaser ....Tektronix, Inc.

Program Committee   Greg Chesson, Chair......Silicon Graphics
Eric Allman.....................Britton-Lee, Inc.
Steve Bourne.................Digital Equipment Corp.
Sally Browning................AT&T Bell Laboratories
Thomas Ferrin ....University of California at San Francisco
Steve Holmgren .............C.M.C.
Steve Johnson.................AT&T Bell Laboratories
Kirk McKusick...............University of California at Berkeley
Dennis Ritchie ....AT&T Bell Laboratories

Papers as well as panel and workshop sessions are solicited on any technical aspect of the UNIX operating system and related areas such as compilers and languages, networks, distributed computation and software tools. In addition, contributions are solicited from the following special areas:

- Programming environments, e.g., Ada
- User interfaces, e.g., windows and interactive debuggers
- Multiprocessor techniques, e.g., snooping caches
- New architectures, e.g., RISC
- Interactive graphics
- System distribution and release techniques
- Evolutionary and perspective points of view
- Standards activities

Conference proceedings will be available at the conference. For the first time, selected papers will be reviewed by *Software Practice and Experience* for a special edition.

The publication schedule is:

Abstracts Due ....March 18, 1985
Notification of acceptance ....April 3, 1985
Camera-ready copy due............May 10, 1985

Abstracts should be at least 1000 words or 1−2 pages in length and convey the sense of the final paper. The program committee prefers to receive abstracts via electronic mail to *ucbvax!portland*. Otherwise they may be sent through the U.S. mail to:

USENIX Program
Silicon Graphics, Inc.
630 Clyde Court
Mountain View, CA 94043

Be sure to include the following information with any submission:

- Title of presentation, panel or workshop
- Full name of author
- Institution or company
- Special audio-visual requirements
- U.S. mail address
- Network address, if available
- Phone number

In case of delay in acknowledging electronic mail or for additional information, contact Greg Chesson, the Program Committee Chair, at (415) 960-1980 (work) or (415) 941-5053 (answer machine).

Call for Memorabilia for the Summer 85 Conference

The 1985 Summer Conference will celebrate ten years of UNIX meetings. An attractive and nostalgic exhibit/event is planned. Anyone with photos, recordings or other memorabilia which they can share should contact Lou Katz at (415) 642-4972 or *ucbvax!lou*.

The Second USENIX Computer Go Tournament

and
(First) Championship

Peter Langston

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   A B C D E F G H J K L M N O P Q R S T
19 + + + + + ● + + + + + + + + + + + + +  19
18 + + ○ ○ ● + ● ○ + + + + ○ ● + ○ + + +  18
17 + ○ + + ○ ● + ○ + + ○ ○ + ○ ● + ● + +  17
16 + + ○ ○ ○ ● ● ○ + + + ○ ○ ● + ● + + +  16
15 + + + ○ + ○ ● ○ ● ○ + ○ ● + + + + + +  15
14 + + + ● ○ ○ ● ● ○ ● ● ● + + + ● + + +  14
13 + + + ● ○ + ○ ● ○ + + + + + + + + + +  13
12 + + + + ● ○ ○ ● + ● + + + + + + + + +  12
11 + ○ ○ + + + ○ ● + + + + + ● + + + + +  11
10 + ● ○ + + + ○ + + + + + + + ● ● + + +  10
 9 + ● + ○ + + + + + + + + + + ○ + + + +   9
 8 + + ● ● ○ ○ ○ + + + + + ○ + + + ○ + +   8
 7 + ● + + ● ● + + + + + + + + ○ + + + +   7
 6 + ● ○ ● + + + + + + + + + + + + + + +   6
 5 + ● ○ ○ + + + + + + + + + + ● + + + +   5
 4 + + ○ + + + ● + + ● + + + + + + ● + +   4
 3 + + + ○ + ○ ● + + + + + + + ● + + + +   3
 2 + + + + ○ + ○ ● + + + + + + + + + + +   2
 1 + + + + + ○ + + + + + + + + + + + + +   1
   A B C D E F G H J K L M N O P Q R S T
```

The second USENIX Computer Go Tournament will be held during the Summer 1985 USENIX Conference in Portland, Oregon.

People who are unable to attend the conference but would like to enter their programs can do so by sending a compilable source to Peter Langston at the address below (or by taking a chance and sending an "executable" file which may, or may not, function under last-minute operating systems changes or machine changes, or ...).

The rules will be those established for the first USENIX Computer Go Tournament (see below).

This event will be a "championship", i.e. the winner will be the "USENIX Computer Go Champion" until the next championship is held (most probably at the Summer 86 meeting).

Comments, suggestions, contributions, etc. should be sent via *uucp* to *bellcore!psl* or via U.S. Mail to:

Peter Langston
Bell Communications Research

MRE 2E-338
435 South Street
Morristown, NJ 07960

Tournament Rules

Revised October, 1984

1) A full size board will be used.

The board will be 19 × 19 with columns labeled 'A' through 'T' (excluding 'I') left to right, and rows labeled '19' through '1', top to bottom.

2) There will be a time limit.

Each program will be limited to a total of 60 minutes of accumulated "user" time. If a program goes over the time limit it will only be allowed 10 seconds of "user" time for each move (byo-romi). If a program goes over the time limit and uses more than 10 seconds of "user" time for a move it will immediately forfeit the game.

3) There will be no forking (around).

For various reasons each program must be a single process and must not fork other processes. Forking interferes with the timing mechanism and, like any attempt to evade or fool the timing, would result in a forfeit.

4) A "referee" program will be used.

The tournament will use a "referee" program to execute each competing pair of programs. There will be no command-line arguments, i.e. *argc* will be 1. All communication with the programs will be via the standard input and standard output; thus the programs must understand a specific set of commands and generate output of a specific form.

INPUT

All input commands to the competing programs will be in the form of lines of text appearing on the standard input and terminated by a newline.

a) The first line of input to each program will be either "black" or "white" (lower case) to indicate which color the program will be playing (and thereby whether the program goes first or second).

b) The placement of a stone will be expressed as letter-number (e.g. "G7"). Note that the letter is capitalized. Also note that the letter 'I' is not included.

c) A pass will be expressed as "pass" (lower case).

d) The command "byo-romi" (lower case) means the time limit has been exceeded and all further moves must be generated within the 10 second time limit.

OUTPUT

All output from the competing programs will be in the form of lines of characters sent to the "standard output", terminated by a newline, and had better either be flushed after every line or be unbuffered to start with (e.g. via the use of "setbuf(stdout, 0);").

a) The placement of a stone must be expressed as letter-number (e.g. "G12"). Note that the letter is upper case and that 'I' is not included.

b) A pass must be expressed as "pass" (lower case).

c) Any other output lines will be considered garbage and ignored.

5) "Bad" moves are a forfeit.

Any syntactically correct but semantically illegal move will be considered a forfeit. The three types of illegal move are: playing on a non-empty spot (already occupied or off the board), ko violation, and suicides.

6) The programs must not be idle unnecessarily.

This rule is included to avoid the cases where a program loses synchronization and is waiting for input at the same time the referee program is waiting for input. As an arbitrary measure, if 10 minutes of "real" time elapse with no increase in "user" time it will be assumed that the program is stuck. In such a case the program will forfeit. (Otherwise the program "for (;;) read(0, buf, sizeof buf);" would never lose a match!)

7) Play will continue until both programs pass in sequence.

The programs may pass at any time, but once both pass concurrently the gameplay is over.

8) The decisions of the judge will be final.

A human judge will evaluate each game's results and may fill in missed dame or may judge a game incomplete if too much is unresolved. Japanese rules will be used (Nihon Kiin).

9) Komi will be 5.5 points.

The second player gets a 5.5 point bonus.

USENIX 4.2BSD Manuals

The second USENIX-sponsored printing of 4.2BSD manuals is complete and is currently being shipped to those sites that have completed the ordering requirements.

There are still manuals available. They may be ordered only by Institutional and Supporting members of the Association that hold a 4.2BSD source license. The manuals are:

UNIX User's Manual (2 volumes)	$18.50
UNIX Programmer's Manual (2 volumes)	$17.00
UNIX System Manager's Manual	$9.50

A complete description of the contents of each volume is contained in the April 1984 issue of *;login:* (Vol. 9, No. 2).

To order, send to the Association Office:

- a completed Manual Reproduction Authorization and Order Form (at the back of this issue of *;login:*),
- a copy of your 4.2BSD source license (if it is not already on file), and
- your check or purchase order made out to "Howard Press" for the cost of the manuals.

Orders will be forwarded to the publisher after license verification has been completed. The publisher, who is located in New Jersey, will ship the manuals directly to you and will bill you for shipping and handling and, if appropriate, local taxes.

The number of each manual available and the possibility of another printing were not known at press time.

USENIX Conference Proceedings Available

Proceedings for the following USENIX-sponsored conferences and workshops are available from the organizations listed. Prices and overseas postage charges are per copy. California residents please add applicable sales tax. Payments must be enclosed with the order and must be in US dollars payable on a US bank.

Meeting	Location	Date	Price	Overseas Postage	Source
USENIX	Dallas	Winter '85	$20	$15	USENIX
USENIX	Salt Lake City	Summer '84	$25	$15	USENIX
UniForum	Washington DC	Winter '84	$30	$20	/usr/group
USENIX	Toronto	Summer '83	$30	$15	USENIX
UNICOM	San Diego	Winter '83	$25	$15	STUG

Addresses

USENIX Association	Software Tools Users Group	/usr/group
P.O. Box 7	140 Center Street	4655 Old Ironsides Dr., #200
El Cerrito, CA 94530	El Segundo, CA 90245	Santa Clara, CA 95050

Problems with Dallas Proceedings

If you discover errors such as missing or inverted pages or other problems with your Dallas Proceedings, please return them to the USENIX office and you will receive a replacement at no cost.

Past USENIX Distribution Tapes Available

The USENIX Association Board of Directors recently voted to lower the cost of past distribution tapes from $100 to $75, due to the availability of the VAX 11/730 in our office for copying. Any current Institutional Member may purchase previous distribution tapes for which he has the appropriate licenses by completing a tape release agreement and sending $75 for each tape desired (no purchase orders, please). Only 1600 bpi tapes can be written. All tapes from 1981 and later are in *tar* format. The 1980 tape is *tp* format. For more information, contact the USENIX Office.

A list of distribution tapes currently available follows. Some descriptions are sketchy since little or no information was provided with the submissions. (The 1980 tape list is extremely sketchy since this tape was produced before the USENIX Office was set up and there are no records as to the contents. The listing below was produced from an inventory of the files on the tape.) Remember also that submissions are distributed as received: some may be incomplete or no longer relevant.

1984.1 Tape Contents

Submission	Submittor	License Requirements
Changes to System V kernel, commands, and include files	John Buck Polytechnic Institute of New York	Sys V
New utilities		
Modified version of *make*(1) that understands RCS	Charles LaBrec Purdue University	V7
Enhancements for 4.2BSD Arpanet code	Bill Shannon Sun Microsystems	None

1983.2 Tape Contents

Submission	Submittor	License Requirements
Kernel modification for higher performance raw mode tty input	Wisconsin State Laboratory of Hygiene	PWB, V6
RJE system for UNIX to Univac 1100		PWB, V6
Enhanced spooling system		PWB, V6
Vir: input record entry/retrieval system		PWB, V6
Local mods to many standard UNIX commands		PWB, V6
UTMOST menu-drive office system	Perkin Elmer	None
Zork game	Daniel Strick University of Pittsburgh	32V
Command line argument handling and date handling packages	Solar Physics Group Stanford University	None

1983.1 Tape Contents

Submission	Submittor	License Requirements
LOGO implementation Version 3	Brian Harvey Lincoln-Sudbury Regional High School and Atari	None
A UNIX system performance benchmark suite and related manual pages	Martin Tuori Defense & Civil Institute of Environmental Medicine	None

Submission	Submittor	License Requirements
V7 drivers: Dicomed COM device via DR-11B, modified TM tape driver, and Xylogics disk controller		V7
Bootstrap code for Xylogics controller		V7
Reference information program for scientists	Stephen D. Klyce LSU Eye Center	None
Almost debugged BASIC to C translator		None
Code changes to *ed*, *sort*, etc.		(?)
Primitive graphics routines		None
Miscellaneous routines		None
Routine statistical programs		None
MENUNIX	Gary Perlman	None
Data analysis programs	University of California at San Diego and Bell Laboratories	None
Libarg—an argument line cracker	John Quarterman	V7
Line printer spooler	Douglas Gwyn	None
Random utilities	Yoran Shoham Geotronics Corp.	None
Screen editor based on *ed*	J. D. Wise Rice University	V7
Tools for extracting cost information from files and including them in proposals	Geoffrey Kodosky National Instruments	None
Restricted UNIX environment for stand alone utilities and diagnostics		V6
System III *uucp* with "all known bug fixes"	Steven McGeady Tektronics	System III

1982 Tape Contents

Submission	Submittor	License Requirements
Device driver and library for Genisco GCT300 color graphics system on a VAX (source license required for kernel to install driver)	General Instrument Corp.	None
Set of commands to implement functions		None
Line printer programs based on 4.1BSD, including graphics support for the LSY-11 (Printronix 300)		None
Seventh Edition commands for 6th Edition Systems	Geotronics Corp.	None
Terminal ports on and off		None

Interactive programmable form filler		None
Tools for multiplexed binary data files		None
General purpose output spooling system		None
A "lock" call and real time support for 6th Edition kernel		None
Graphics driver for H.I. CPS-15/6 plotter		None
Implementation of LOGO language interpreter	Lincoln-Sudbury Regional High School	None
Creation and typing of form letters		None
Modifications to V7 system programs		V7
Improvements to *nroff*		None
EMACS-like editor called TORES		None
Quite a few games		None

1981 Tape Contents

Submission	Submittor	License Requirements
Various programs	Walter D. Lazear U.S. Air Force	None
TUG	Dennis L. Mumaugh	None
UNIX course	Dept. of Defense	None
coregraph		None
src/GC—programs and library routines for public consumption	Darrell R. Word Geotronics Corp.	None
hlp—primitive help system		None
UNIX utility sources upgraded to V7		V6
UNIX kernel and bootstrap sources plus drivers for CR-11, DZ-11 and XY-11		V6
tig—version of Mike Muuss's terminal independent graphics system		None
Versatec utilities	Michael D. O'Dell Lawrence Berkeley Lab	Phototypsetter
make enhancement for maintaining more complex systems	Robert L. Walton MIT Lincoln Lab	V7
pr—enhancements to make a better file print formatter, used in the lpf shell file		V7
col—ditto for printing manuals sections, modified *nroff* to accept whole shell		V7

cpp—would like to have more advanced *cpp*; included to stimulate interest		V7
a68	Chris J. Terman MIT Computer Science Lab	V7
Device handlers: dx—modification of handler rx—single density floppy handler from scratch xy—incremental plotter interface hm—handler for System Industries Fujitsu 160 Mbyte Winchester disk with 9400 controller mdec—boot loaders for hm and rx cscan—recognizes usual char constant syntax ls—lists directory into specified buffer and sorts match—pattern matches *ed/grep* regular expressions sl echo—modified to use cscan ls—modified to list directory recursively, depth 1st chaos—redirect output to someone else's ADM-3A to cause interesting reactions rtpip—to create, squeeze. etc. an RT file system in a UNIX (special) file f.r—to run RT Fortran, Basic, Macro, link	Geoffery Kodosky National Instruments	V6
nbs/dd m7	Joan S. Bowden National Bureau of Standards	None
dungeon rt11 (?) PDP11 (?) VAX11 (?)	Daniel R. Strick University of Pittsburgh	None None and V6 None and 32V
bin/df—a V7 shell file that inhales the mount table and prints a df for each filesystem and pathname bin/help—shell files similar to *man* and fires up *nroff* to print it src/acct.c—print accounting file src/cookie.c—random print of fortune cookie-type message src/cpm—allows a UNIX system to read and write CP/M format floppy disks; requires a RX-11 driver src/tprintf.c—terminal independent *printf* for optimization	Scott Bertilson Rosemount Inc.	None

src/logger.c—coughs message for log on or off

src/sim—discrete event simulation package

src/splot.c—simple screen plotting program

src/talk.c—like *write*(1), but 1 character at a time

src/words.c—attempts to find words that sound like thoses entered

src/xtime.c—tests current time for shell files

sys/dev/rx.c—RX01 floppy driver, table driven interleaving

sys/sys/clock.c.diff—small mod to clock.c gives a blinky-light histogram of CPU time usage for a PDP 11/45 or 11/70

c-fix	George K. Rosenberg	None
compat—PDP-11 compatibility mode for VAX 11/780 modified to support MACRO on V6	Joshua K. Knight, III Stanford University	V6
contents		32V
macro		V6
lpd—line printer spooling system and replacement for V7 *cu* command	Samuel J. Leffler Sytek Inc.	None
man (?)	Bill Shannon	
tip (?)	Digital Equipment Corp.	
able.ms	Laurence J. Morandi	V7
bio.c	Tektronix	
machdep.c		
mch.s		
param.h		
rl.c		
seg.h		
tm.c		
P—prints files on the terminal one full screen at a time	David R. Galloway University of Toronto	None
c(1)—splits a long output up into columns and prints it side by side		
cires_apoc	Ernest W. Harkins	None
crash.doc	University of Colorado	None
leroy		
leroy.ms		
libCf and libCm		
libDV and lib HP		
libplot		
man3		
plot		
unix_at_cires		

vroff

1980 Tape Contents

Submission	Submittor	License Requirements
menu	adi	?
tcom		?
concat	New York Blood	?
convert		?
equ		?
news		?
sys1.c		V6-7 (?)
sys2.c		V6-7 (?)
sys3.c		V6-7 (?)
sysent.c		V6-7 (?)
trap.h		V6-7 (?)
dz	Nijmegen	None
fconv		
restor		
rk		
sda		
apl	Purdue	V6
sys		
changes to library routines	Pitt [sic]	V7
assorted stuff	UK	V6
stuff	Boulder	
cf	Ampex	
man/tty.4		V7
stdplt		None
sys		V7
?	Caltech	V6
tools	DPW	None
stuff	Delaware	
campos		
cincinnati		
cwru		V6
cwru.v7/sys		V7
?	Geotronics Corp.	None

wetzel	Pittsburgh	
rosenberg	Pittsburgh	
?	Tektronix	None/V7

Summary of USENIX Association Board of Directors Meeting

Golden, Colorado
October 9th and 10th, 1984

Present: Nemeth, Ferrin, Johnson, Katz, Law, Scherrer, Tilson, Wedel
Guests at various times: Judy DesHarnais, Charisse Castagnoli, John Donnelly

Minutes of the Preceding Board Meeting

The minutes of the Salt Lake City, Utah Board meeting held June 15th and 16th, 1984 were accepted as amended.

Future Meetings

Decisions were required on vendor exhibit management, as Chuck Bierley, who had been responsible for the exhibits at Salt Lake City had resigned from IPW and set up his own company. Interviews were held with Bierley and Peter Johnson, President of IPW, to decide if either or any of the two would be retained for the Portland meeting.

As a result of the interviews, and after considerable discussion, it was decided that Johnson of IPW would be selected for Portland.

DesHarnais submitted a preliminary budget for Portland (Summer 85). Various items were discussed; preregistration and on-site registration fees were set.

Various sites were under consideration for meetings following Portland:

1986 — Atlanta Hilton, week of June 9th
1987 — Phoenix or Denver
1988 — San Francisco Hilton
1989 — Sheraton Boston and the remodelled Hynes Auditorium

Other sites under consideration: Philadelphia for 1989.

The Salt Lake City Conference

DesHarnais submitted an unaudited financial report for the meeting. There were 1300 paid attendees, of whom 55% attended tutorials. Various questions concerning individual items were answered.

Distribution Tape Report

Scherrer reported that the 84.1 tape was in production. Peter Gross, the tape editor, was doing an excellent job. USENIX is attempting to obtain the 4.2BSD buglist for distribution. It is available through mt Xinu, as Berkeley did not want to distribute it. However, getting permission to distribute the buglist requires several legal maneuvers which have already been initiated.

Scherrer also reported that she had received a letter from the USENIX lawyer concerning possible changes in the Software Release form which those receiving the tapes are required to sign. It was

decided by formal motion to incorporate some of the suggested changes.

The Dallas Meeting

Charisse Castagnoli was welcomed as the Technical Chair for the Dallas conference. Nemeth reported there had been negotiations with /usr/group on various items, but no agreement could be reached on cross-registration. It was decided that the emphasis had to be on high quality technical presentations, each of longer duration than in the past. Castagnoli said it was planned to have proceedings ready for distribution at the meeting; she provided a tentative list of sessions. Tilson said he had 7 tutorial speakers organised. A schedule for mailing and announcements was set. A/V was discussed: it was decided to use a local company in Dallas. Registration was discussed — for a 2 day meeting, it would be impossible to generate a list of attendees for distribution at the meeting.

General parameters for the budget were agreed upon, based on conservative estimates of attendance. Tutorial registration fees were set.

Executive Director

A job description was approved and circulated, and a search committee set up.

Financial Report

Wedel presented a financial report. The Association has been awarded tax exempt status. Scherrer was formally thanked for her extensive efforts on this project.

Newsletter Report

Brian Redman was doing a great job as editor — things were running much more smoothly. Decisions on format changes etc. were postponed until the Executive Director was hired.

Office Report

Two of the principals of PP&S were moving to Sacramento. It was decided to leave things as they are at present, at least until the Executive Director is hired.

Office Computer

Tom Parker of QMS is possibly willing to donate a QMS Lasergrafix 800 laser printer. Ferrin was asked to follow up.

4.2BSD Manuals

Ferrin was congratulated on his work in getting the manuals into production. The first printing is sold out. There were some minor problems and suggestions for the next printing. Comments about quality are due to the fact that some sections are reproductions of original papers — original materials were not available.

Workshops

Nemeth reported on the Distributed Systems Workshop held in September. There were 73 paid attendees. 41 questionnaires were returned — most positive. Wedel had cancelled the Communications workshop, resulting in contractual problems with the hotel. Katz reported that the graphics workshop was organised, and being publicised.

Usenet — Legal Issues

A legal memorandum dealing with netnews was distributed; it will be published in the next issue of *;login:*. In summary, if one acts as a common carrier, there is no liability. However, there are no precedents, so any problem can become a special case.

Katz reported on the Satellite Project (Lauren Weinstein). Necessary equipment was being gathered; it was thought a demonstration at the Dallas meeting might be useful. Support of expenses was discussed and authorised.

Electronic Publication

Johnson thought the best approach was to make a deal with a publisher — he had had discussions with the editor of *Software Practice and Experience*. He felt that immediate needs were being met by the net. He felt that electronic publication must be an alternative to existing methods, not a replacement.

1985 Membership Renewal

Membership fees were set, and the membership form amended, as the Association no longer requires licenses for membership.

Use of Volunteers

There is a need to have someone in charge and to generate new ideas. It was decided that volunteers should report to the future Executive Director.

USENIX Office Mailings

84.2 Distribution Tapes Mailed

As of February 28, 1985, the majority of the 84.2 distribution tapes, which contained the 4.2BSD buglist, have been mailed to the Institutional and Supporting members who requested them. The remaining tapes will be sent as soon as the paperwork has been completed.

Membership Renewal for 1985

1985 membership renewal forms were sent to all 1984 Individual and Institutional members on February 20, 1985. If you have not received your renewal application, they were available in the November issue of *;login:* or contact the Association office.

Local User Groups

The USENIX Association will support local user groups in the United States and Canada in the following ways:

- Assisting the formation of a local user group by doing an initial mailing for the group. This mailing may consist of a list supplied by the group, or may be derived from the USENIX membership list for the geographical area involved. At least one member of the organizing group must be a current member of the USENIX Association. Membership in the group must be open to the public.

- Publishing information on local user groups in ;login: giving the name, address, phone number, net address, time and location of meetings, etc. Announcements of special events are welcome; send them to the editor at the USENIX office.

Please contact the USENIX office if you need assistance in either of the above matters. Our current list of local groups follows.

In the Boulder area a group meets about every two months at different sites for informal discussions.

Front Range Users Group
N.B.I., Inc.
P.O. Box 9001
Boulder, CO 80301

Steve Gaede   (303) 444-5710
hao!nbires!gaede

Dallas / Fort Worth UNIX User's Group
Advanced Computer Seminars
2915 L.B.J. Freeway, Suite 161
Dallas, TX 75234

Irv Wardlow   (214) 484-UNIX

In the Washington, D.C., area an informal group meets every two months or so. The current contact is:

Neil Groundwater   (703) 893-6140
Analytic Disciplines, Inc.
Suite 300
8320 Old Courthouse Road
Vienna, VA 22180

npg@lbl-csam

In the New York City area there is a non-profit organization for users and vendors of products and services for UNIX systems.

Unigroup of New York
G.P.O. Box 1931
New York, NY 10116

In Minnesota a group meets on the first Wednesday of each month. For information contact:

UNIX Users of Minnesota
Carolyn Downey   (612) 934-1199

In the Atlanta area there is a group for people with interest in UNIX or UNIX-like systems:

Atlanta UNIX Users Group
P.O. Box 12241
Atlanta, GA 30355-2241

Marc Merlin   (404) 255-2848
Mark Landry   (404) 874 6037

In the Seattle area there is a group with over 150 members, a monthly newsletter and meetings the fourth Tuesday of each month.

Seattle / UNIX Group
P.O. 58852
Seattle, WA 98188

Irene Pasternack   (206) FOR-UNIX
uw-beaver!tikal!ssc!slug

An informal group is starting in the St. Louis area:

St. Louis UNIX Users Group
Plus Five Computer Services
765 Westwood, 10A
Clayton, MO 63105

Eric Kiebler   (314) 725-9492
ihnp4!plus5!sluug

In the northern New England area is a group that
meets monthly at different sites. Contact one of
the following for information:

Emily Bryant   (603) 646-2999
Kiewit Computation Center
Dartmouth College
Hanover, NH 03755

decvax!dartvax!emilyb

David Marston   (603) 883-3556
Daniel Webster College
University Drive
Nashua, NH 03063

A Word Puzzle

Rich Kensicki

Find 16 C Language Keywords

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N Q S S O D Y S R J D B W T K K
L Q R P X K O E W D M R H A V E
W X O N B K T U S I E Y I L J J
H S I T A U P Z B O T T L Y X S
H R A V R V I N T L T C E T T S
M T S N T J X M A M E C H A R P
O B J H T L U A F E D S R S R A
O G I R O K N Q C P C Z U W N C
N N B T X R L K A N Y R T N E T
U U P G U E T H S Y C I T A T S
T P N V M S I Z E O F X T E B Y
C Z N I Y S J G T N Y A F X S W
U Z V F O H R N J R O V L T I A
R L I R B N B O K L H L B N J E
T L S Z W B L L F W N X E L B K
S X B Q B H K Q D O H Q D D P R
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Release Form for 1985 USENIX Distribution Tapes

INSTITUTIONAL OR SUPPORTING MEMBERS ONLY

As an Institutional or Supporting Member of the USENIX Association, I wish to receive the 1985 USENIX Distribution Tape(s) (hereafter referred to as the TAPES). By virtue of this signed release form, I agree to the following Terms and Conditions governing the use of any and all TAPES sent to me.

(1) **Neither the USENIX Association, its officers, employees, and agents, nor the authors nor submitters of the materials on the TAPES (hereafter referred to as the ABOVENAMED) make any representation or warranty, expressed or implied, as to the accuracy, completeness, or usefulness, of the TAPES or the contents thereof for any purpose whatsoever.**

(2) To the extent permitted by law, I hereby explicitly indemnify and hold harmless the ABOVENAMED from any claims, costs, damages and liability whatsoever with respect to the TAPES or the contents thereof.

(3) No property rights with respect to the TAPES or the contents thereof shall transfer to me. The TAPES shall remain the property of the USENIX Association and the contents thereof shall remain the property of the person or persons who possessed that property before the TAPES were written.

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